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OPERATIONS FOR RETENTION OF URINE

DEPENDENT ON

STRICTURE OF THE URETHRA:

A Clinical Lecture delivered at ~~the~~ St. Thomas's Hospital in 1852, and ~~reprinted from the 'Medical Times and Gazette' of that year:~~ re-printed, with the following preparatory Note, in the Hospital-Reports of 1880.

~~By~~ John Simon, C.B.,

~~Consulting Surgeon to the Hospital.~~

Preparatory Note.

~~Prefatory Note.~~

Dear Mr. Editor,—

Honoured by your invitation to contribute a paper to the present series of our 'Hospital Reports,' but finding to my regret that I have nothing of recent work wherewith to respond to the invitation, I gladly avail myself of your willingness to print in the 'Reports,' and thus to identify as a product (however humble) of our School, a certain Clinical Lecture which I gave in the Hospital more than twenty-eight years ago, and which, published at that time in one of the London Medical Journals, may perhaps be credited with having had influence in the branch of practice to which it relates—the *Surgical Treatment of extreme cases of Urethral Stricture*; and as your reprint of the Lecture will be without change from the original, it may be that the following little explanation will be proper to accompany it.

At the close of the first fifty years of the present century, the general rule of surgical practice, with regard to unyielding cases of strictural retention of urine, was, that the surgeon in last resort must proceed to the so-called *Perinæal Section* which had then come into vogue, and which claimed as its distinctive feature and merit that it included *Division of the Stricture*.

I am not aware that before 1852 any dissent from that rule of practice had been publicly expressed; but early in 1852 protests against it

were raised simultaneously, though independently of each other, by my much esteemed friend, Mr. Edward Cock, and myself: by him, from Guy's Hospital, in an admirable paper read before the Royal Medical and Chirurgical Society on April 13th; and by me, from St. Thomas's, in the present Lecture, which was published in the 'Medical Times and Gazette' of April 10th and 17th.

As against the then popular Perinæal Section, Mr. Cock and I were quite at one,—equally contending that, in cases of the described sort, the surgeon had better limit his immmediate aim to providing a proper artificial outlet for the urine, not making any attempt at division of the stricture, but leaving the stricture, at least for a time, unmolested by surgical instruments as well as without pressure from the bladder. Thus far Mr. Cock and I were agreed; but beyond this point, we differed. In answer, namely, to the question, in what way would we provide for the urine the artificial escape which we recommended, Mr. Cock's advice was TO TAP THE BLADDER THROUGH THE RECTUM, while mine was TO OPEN THE URETHRA IN FRONT OF THE PROSTATE; and each of us devoted most of his paper to advocating and illustrating the particular operation which he preferred.

Mr. Cock expressed in his paper a most unfavorable opinion of the alternative which I was recommending, and which at an earlier date he had himself in some instances tried; but I have the pleasure of knowing that he afterwards became convinced of its advantages; and they indeed could not be better stated than they at last are by himself in a paper which he contributed in 1866 to the 'Guy's Hospital Reports.' So effectual has been Mr. Cock's conversion, that the alternative which he in 1852 denounced has now at Guy's Hospital got to be familiarly called by his name; and I even observe that two of the present surgeons of the Hospital—Mr. Bryant in his 'Manual for the Practice of Surgery,' and Mr. Howse in the last volume of the 'Transactions of the Clinical Society,' formally write of it as "Cock's operation."

I need hardly say that no living surgeon can pretend to have invented the operation of cutting from the perinæum into the membranous portion of the urethra. Speaking of it as mere anatomical operation, we could perhaps not easily name the time when it was unknown. As a way to relieve the bladder, it must at any rate I should suppose have been often tried in this country before the present century; while on the Continent it seems to have been known to surgeons as one of the forms of "la boutonnière." * It will be seen that towards the close of

* That old French term seems to have covered all the various perinæal operations which were practised for retention of urine: such as (1) operations in which the bladder was tapped or cut into from the perinæum, and (2) operations more or less of the intention of our subsequent perinæal section with division of the stricture, as advocated in Mr. Grainger's essay of 1815, and (3) operations in which the urethra behind the stricture was made a way for catheters into the bladder from the perinæum. The scanty historical references in the lecture were meant only to refer to British surgery.

my Lecture I mentioned some notices of the operation by contemporary British surgeons; and had I at the time been aware of it, I might with advantage have adduced a fuller and more applicable quotation from the pages of Sir Charles Bell's last surgical work, his 'Institutes of Surgery,' published in 1838. Discussing in that work (vol. i, p. 305) the question "how the bladder is to be relieved in case of total obstruction," he says that of late years he has rejected all other methods than the following:—"Put a catheter or a sound down to the stricture and give it to an assistant; introduce your finger into the rectum, and feel the prostate. Thus prepared, take a sharp-pointed bistoury, slightly curved, plunge it into the perinæum just anterior to the anus, carry it towards the face of the prostate. The finger in the gut, the knife is carried in the outside of the gut. When the point has arrived at the prostate, the hand is to be depressed, and the point thrust into the urethra. It is to be brought out, cutting along the membranous part of the urethra, and at the same time in a manner to open the integuments of the perinæum largely. The urine spouts from the incision, and the patient feels instant relief. The patient from this moment being safe, and free without that torturing dissection which we have seen so long practised of cutting into the stricture, you may put him into bed or finish the operation. I prefer seeing him recruited before I proceed further. You may destroy the stricture at your leisure (because there is now no danger to the bladder) and having passed the catheter through the stricture you divert it into the bladder, a matter of no difficulty. There is no greater triumph than a cure thus conducted." If Sir Charles Bell's illustrious life had lasted him to re-edit that striking passage, and to enrich it with further fruits of his ever keen spirit of observation, his genius, I feel assured, would have dealt still more decisively with "that torturing dissection" which purports to divide the stricture, would not have remained content with merely reserving it for "leisure" as something to "finish the operation," but would unequivocally and finally have set it aside as a mischievous inheritance from his predecessors.

It may be proper for me to add that the practice which is recommended in my Lecture of 1852 is that which I continued to recommend and to follow during all the long remainder of my teachership in the Hospital, and that all subsequent experience strengthened my opinion in its favour. In reading the Lecture again after the lapse of so many years, I of course see points where I believe I could improve it; but the only one, which I think worth present notice, is, that something distinct ought to have been said about the strictures which are virtually incurable. When the urethra is opened behind a stricture which has caused retention of urine, the degree in which the stricture itself is benefited by that relief is not the same for all sorts of stricture. It has its maximum in proportion as recent inflammatory swelling or spasm had contributed to narrow the canal: it has its minimum in proportion as the stricture is constituted of cicatrix: and this minimum becomes zero in

the comparatively rare cases where a length in the continuity of the canal has become permanently lost in solid scar. In cases of the last-mentioned sort, and in some others which nearly approach it, the permanent mechanical obstacle remains of course unaffected by the urethrotomy; but the operation will have supplied the best palliative which surgery is able to afford; for through the straight surgical opening, kept free by the regular use of a short elastic catheter, the patient may for the rest of his life continue to pass urine with comparatively little physical discomfort.

I am, dear Mr. Editor,
Yours very faithfully,
JOHN SIMON.

~~August, 1880.~~
~~FRANCIS MASON, Esq.~~
~~&c., &c., &c.~~

LECTURE ~~A~~ 1852.

GENTLEMEN,—When your patient, by reason of a stricture in the urethra, is unable to empty his bladder along the natural channel, and when you are foiled in your utmost endeavours to effect this for him by catheterism, or by the employment of other appropriate means,—in that emergency, when it arises, how are you to give an artificial vent to the urine? I purpose illustrating to you, in the present lecture, what I consider the right answer to this question. I shall explain to you the general principles which determine the surgeon to make artificial openings into the urinary passage; and I shall give you the *rationale* of a line of treatment, which you have seen me adopt successfully in various cases, as a substitute for the operations more commonly practised.

First, however, let me impress on you that, in the hands of a skilful surgeon, the emergency to which I advert is not a frequent one, and that you must not too readily admit its existence as your ground for the operations in question. I cannot now go into the whole subject of inveterate stricture; but, if you have given attention to the routine of hospital-practice during a few months, you must know that, in an immense majority of instances—even of very old, very

tight, very obstinate stricture, provided other conditions are absent to which I shall presently refer, we succeed in giving relief without recurring to the last expedient of knives or trocars.

The necessity for making an artificial opening into the urinary passages may be established, for such cases as we are considering, under any one of these three conditions, viz.:

(1) All means for procuring the natural discharge of urine may absolutely fail. (2) Urgent constitutional distress may render it dangerous to temporise, as in attempting the gradual dilatation of the stricture. (3) The urethra may have ulcerated at the seat of stricture, and may be allowing extravasation of urine to occur, with its attendant wide-spread mischief.

1. As regards the first condition, I believe it to be of the very utmost rarity. Taken simply and singly, it has never yet driven me to the necessity of operating. The local state of stricture which determines complete retention of urine is a compound one. Though the canal be permanently so small as to make urination very laborious, perhaps allowing the patient to effect it only *guttatim*, yet that which brings him to a dead lock is a temporary work. The mucous membrane is swollen by some additional congestion of blood, or the canal is obliterated by muscular spasm. And over this temporary aggravation we have great control. A full dose of opium, aided, perhaps, by leeches to the perinæum and by the hot bath, or in some cases preceded by the action of a brisk purgative, will generally give relief; and thus, even if we cannot extemporaneously get a catheter into the bladder, we can re-establish the patient in his previous state of dribbling urination; we can ensure that his bladder shall partially evacuate its contents; and we can gain time for that gradual dilatation of the stricture which will bring more complete and permanent advantage. With these resources in your hands, and with an expert, but, above all, a gentle and patient, management of the catheter, I can promise that you will scarcely ever find yourselves defeated in uncomplicated cases of retention of urine from stricture. Should that rare contingency arise, should your milder measures utterly fail, should the urethra remain absolutely impervious—letting in

no catheter, letting out no urine, then undoubtedly, as I have stated, this condition would establish a necessity—a legitimate and imperative and urgent necessity, for your making an artificial vent for the distended bladder.

2. The second specified condition for the performance of such an operation is a more frequent motive than the first. The stricture, though very close, may not be quite impervious; it may let enough urine pass to keep the bladder free from fatal distension; it may even (though this would be unusual) permit your smallest catheter to traverse it; yet with all this, your patient may be dying. He is an old man, perhaps, with a shattered constitution; he has been plagued with his stricture for years; it has been neglected or aggravated; his urine is fetid and full of pus; he has had constantly recurring rigors; his loins are painful and tender; every attempt at dilatation of his urethra gives severe suffering; his shiverings and sweatings have left him each day feebler; his weak pulse beats above 100 in the minute; his hands are tremulous; his tongue is getting dry; he is threatening to become typhoid—breaking down under the prolonged irritation of his local disease. You may entertain no doubt that, with time, you could dilate his stricture; but here exactly it is, that time is an ally you cannot reckon on. A fortnight or three weeks would be requisite for your endeavour to have any success; and far within that period you would have nothing but the dead body to catheterise. Here, obviously, there is urgent need for immediate and complete relief —for relief that shall at once put the man into a tranquil and painless state; and the establishment of an artificial outlet for his urine is the clear indication of treatment.

3. The third condition which I have stated to warrant the necessity of this proceeding, is that under which we most commonly adopt it,—where, namely, the urethra has given way behind the seat of stricture, and presents an aperture through which, at every contraction of the bladder, urine is effused amid the adjacent textures, exciting them to inflammation and gangrene. I need hardly tell you, that cases of this description are among the most urgent in surgical practice, and that the utmost promptitude of relief is requisite for the patient's safety. Though the stricture, so far as that

goes, may be of a kind likely to yield to gradual dilatation, yet, pending this slow process, what is to become of the urine? Is it to continue its destructive course of effusion amid living textures? Manifestly not; and therefore the local treatment resolves itself under two heads: first, to adopt such a course, relatively to the strictured and perforated canal, as will prevent any further extravasation of urine; secondly, to make such incisions as may be requisite for discharging out of the infiltrated tissues all their fetid accumulation of urine, pus, and sloughs. In seeking to fulfil the former of these indications, we find it necessary (as under the conditions previously considered) to make an artificial passage for the urine; and the operation, as I have said, has its most frequent necessity in the condition here adverted to. Out of six cases, which I shall presently bring before you, in which I was obliged to perform the operation in question, five were cases in which the urethra had given way, and extravasation of urine was in progress.

And now, gentlemen, suppose the necessity to be established for your giving an artificial passage to the urine;—suppose one of the three conditions to be present which I have stated to you; that you cannot procure any discharge whatever by the natural channel; or that your patient is suffering urgent constitutional distress from the insufficiency of such relief as you have procured him; or that the perinæum and genitals are beginning to swell with extravasation of urine;—now, what course have you to adopt?

The operation which for a great many years has been prevalent here, and, indeed, in most London schools of surgery, has been the following:—(1) A catheter or sound has been passed up to the seat of stricture, at or near the bulb of the urethra; (2) a long cut has then been made in the raphe of the perinæum, reaching down to the urethra, and opening it behind the seat of stricture; (3) the urethral incision has been prolonged forwards, towards the point of the catheter or sound, so as to split open the contracted portion of the canal; and finally (4) all impediments being overcome, a large catheter has been conducted along the urethra into the bladder, and there secured by appropriate bandages.

You will find this operation fully described in Mr. South's translation of Chelius, and spoken of as the practice of the Borough hospitals for the past thirty or forty years. And, if you wish to see the operation in its most favorable aspect, you cannot do better than observe it in Mr. South's hands, who has had great experience in the proceeding, and who executes it with all the care and patience which are indispensable for its success.

Professor Syme, of Edinburgh, who is a great authority in such matters, speaks of this operation as "protracted, uncertain, dangerous, and unsatisfactory." Looking to its average performance, I must say my experience would justify this censure. It is *protracted,* for the patient undergoes severe manipulation during a period, of which the mean would be twenty to thirty minutes. It is *uncertain,* for the division of a stricture or strictures to which one is so imperfectly guided, cannot be accomplished with facility: nor can one feel sure, under the most favorable circumstances, that one's scalpel has hit the exact line of a canal contracted (perhaps for an inch of its length) to such narrow dimensions as scarcely, if at all, to admit the smallest catheter.* It is *dangerous,* because, in addition to the sources of risk just adverted to, large hæmorrhage not unfrequently contributes to exhaust the patient; and further, because in many cases (as where the urethra is contracted throughout its whole spongy portion) a catheter cannot be maintained in the passage, without prolonging that state of pain and irritation which already have set life in jeopardy. And *unsatisfactory* it must be on all these grounds. For what can be more so, than to conclude a severe and dangerous operation with uncertainty as to whether one has accomplished that very object for which the severity and the danger were encountered?

These objections apply to the proceeding as practised by the best—I mean the most careful, operators. In other than good hands, it is a very horrid affair: metallic instruments are thrust in all directions; they leave the canal at one

* "Even under the most favorable circumstances, it cannot be otherwise than doubtful whether the stricture be properly divided; that is, whether the incision has passed through the narrow canal in the centre, or through the solid substance on one side."—*Brodie on Diseases of Urinary Organs,* p. 65.

place, and re-enter it, by perforation, at another; or they pass up to the hilt—one shudders to think where, and draw no water; the rectum, the prostate, even the bladder, undergoes injury in these violent efforts, and the patient is eventually sent to bed, it may be with his bladder unemptied, having his chance of cure sensibly diminished by the infliction of so much unnecessary mischief.

We cannot be surprised that many surgeons have taken refuge from the precarious chances of this operation in the comparatively simple and secure process of tapping the bladder by the rectum or above the pubes. I shall presently describe to you the operation which, generally speaking, I consider a far preferable alternative even to these. But, before examining their comparative merits, I have still something more to say in respect of the last.

Within these few years, Professor Syme has introduced a method of dealing with obstinate strictures, by dividing them on a director previously passed through the constriction; and you may ask whether the adoption of this manœuvre would be applicable to the cases we are considering, so as to remove the objections I have expressed to the operation of dividing the stricture without any such assistance? I think not. The cases heretofore treated by Mr. Syme's operation have not been cases where the primary consideration is to give immediate relief to a distended bladder, or to provide against advancing extravasation of urine; and in cases such as these there are generally circumstances which would render the director inadmissible. If the urethra is impervious to a small catheter, it is not likely to yield to this other instrument; if the canal has ulcerated, so as to communicate with infiltrated and sloughing tissues, or is riddled with false passages, the director would be not unlikely to prove a treacherous guide. Here and there one might find a case in which (supposing division of the stricture to be our desideratum) Mr. Syme's principle would admit of application; but, speaking generally, I may repeat that his proceeding relates to quite a different class of cases.

But, gentlemen, if that "protracted, uncertain, dangerous, and unsatisfactory" operation, which I have described, could admit of serviceable modification by Mr. Syme's proceedings,

there is yet another reason, I think, which would induce us to reject it.

The operation held its ground because of its alleged completeness. The notion of dividing (and therein *curing*) the stricture, at the same moment as one gave relief to the distended bladder, was indeed charming. But, of late years, surgeons have discovered that this seductive completeness had in it a practical fallacy. The division of the stricture was the sheerest superfluity. Let the bladder be relieved any how, by the perinæum, by the rectum, by the pubes; merely let the stricture for a while be undisturbed by the constant irritation of urine urged against it from behind; and there speedily occurs a spontaneous permeability of the canal. The stricture wants no cutting. It loosens itself.*

So remarkably does this effect belong to the withdrawal of pressure from the stricture, that it arises, not only when the surgeon has made an artificial outlet for the water, but also under far less favorable circumstances; namely, where the urethra has given way behind the stricture, and where the bladder expends its chief expulsive force in driving the urine into surrounding textures. "The first effect of this mischief (says Sir Benjamin Brodie) is to relieve the patient's sufferings; there is no more straining, and the spasm of the stricture, no longer excited by the pressure behind, becomes relaxed, so as to allow some of the urine to flow by the natural channel." Further, in the very numerous cases where the endeavour to divide a stricture has been defeated by the difficulties I have adverted to, and where (contrary to the performer's intention) the operation has not advanced further than the stage of cutting into the bladder or urethra somewhere behind the obstruction, the same loosening of the stricture has been observed to ensue, as though it had actually been divided.†

Surely, it cannot be desirable to incur difficulties and

* [For a qualification which ought to have been made in this statement, see last paragraph of Prefatory Note.—J. S., 1880.]

† "In cases of stricture, if the stricture be so far forward that it be not involved in the wound in the perinæum, or by sloughing, if urine be extravasated, it generally relaxes so much that it can be cured by the ordinary treatment with bougies or sounds, during the reparation of the wound in the perinæum."—*Mr. South, in note to Translation of Chelius*, vol. ii, p. 436.

dangers in attempting to divide a stricture, when the same advantages spontaneously arise without that division being accomplished.

These considerations have led me to the modified perinæal operation, which you have seen me perform in various instances, and which consists simply in this.—I open the urethra by puncture, or by very small incision, immediately in front of the prostate gland. I run a short elastic catheter along this wound to the bladder. I leave the stricture quite untouched for ten days, more or less, during which the urine flows entirely by the perinæal catheter. At the end of this time, I find the stricture sufficiently relaxed for me to begin its dilatation with a middle-sized instrument; and I thus obtain all the advantages assigned to the severer and more difficult measure, while adopting an operation of extreme slightness and security.

I have already intimated to you that many surgeons, feeling the risks and difficulties which are inseparable from the ordinary perinæal operation, have chosen rather to tap the bladder, in such cases as we are considering, either above the pubes or by the rectum. Obviously, on the principles which I have stated to you, either of these proceedings might give very satisfactory results. The bladder would be effectually emptied, and the stricture relieved from irritation; supposing the urethra to have given way, diffusion of urine would be prevented; and neither of these operations can be considered very difficult or very dangerous.

If, therefore, my choice lay between the ordinary perinæal operation and these other expedients, I should not hesitate to prefer one of the latter. But the modified perinæal operation which I advocate is still simpler and safer.

I admit, for instance, that tapping the bladder through the rectum is not a very difficult or very dangerous operation. A man of ordinary skill can hardly bungle it. Yet it is not quite so simple a matter as driving your trocar into a hydrocele. It requires some practice and dexterity. I have known an able surgeon, in attempting it, make two successive stabs; the first *went by the side* of the bladder, the second *transfixed*

it. And I should doubt whether, even under the most skilful management, the peritonæum would always be so safe from injury as the advocates of the operation believe.

But assuming, for argument's sake, that the manipulation shall never miscarry by any such slips as these, I can still scarcely approve of the operation. To bore a hole through the rectum would seem, at first blush, a roundabout way of emptying the bladder. It strikes me as an awkward and unworkmanlike proceeding, to involve a second viscus unnecessarily in the attempt to relieve a first. One would wish to minimise the injury of one's operation; and, if one can relieve the bladder equally well without wounding the rectum, if one can accomplish one's purpose by a direct cut through the common integuments or little more, surely one would argue *primâ facie* that the rectum should be let alone. For the wounding of the bowel cannot be a matter of indifference. The track of the trocar between the seminal vesicles must be the seat of irritation, not often perhaps to a serious extent, but certainly sometimes. Occasionally, no doubt, an abscess forms there, aided by a little infiltration of urine; and from such a beginning as this very multiplied mischief might arise and continue. I understand there died in this hospital, not long ago, a patient who, at some previous time, had undergone elsewhere the operation in question; and in whom the irritation occasioned by it had never subsided. There had apparently been formed (in the manner just suggested) an abscess between the two openings; urine continued to flow through the rectum, with extreme discomfort and tenesmus; and the man's health was undermined by this continued suffering and irritation. I repeat, therefore, that the rectal operation, as compared with the ordinary perinæal section, presents unquestionable advantages; but, as compared with the modified perinæal operation, it must be considered, I think, to have the disadvantage of inflicting unnecessary injury, and incurring unnecessary risks.

The supra-pubic tapping of the bladder is even easier of performance than the rectal operation, and has some other arguments in its favour. Indeed, there are cases, though not such as we are now considering, in which the bladder cannot be relieved by any other proceeding. Such are the cases in

which invincible retention of urine is occasioned by tumours of the prostate; for here, obviously, no perinæal incision would carry us beyond the obstruction, and the morbid growth would render tapping *per rectum* difficult or impossible.

But, as respects cases in which our necessity to operate depends on stricture and its consequences, I cannot think the supra-pubic puncture a desirable proceeding. The distance to which the contracted bladder retreats, so soon as its contents are discharged, is a matter of serious inconvenience. The arcolar tissue between the bladder and the abdominal wall may easily get irritated by soakage of urine. The opposed edges of the recti would, in any such case, be an obstacle to the escape of the unhealthy accumulation. Further, notwithstanding the facility of the puncture, mischances have happened in its performance; and, both in the operation and afterwards, the posterior wall of the bladder has suffered from the trocar or the canula.

Reviewing the objections I have briefly stated, I cannot but give a decided preference to the modified perinæal operation, in all cases which admit its execution. The point of the urethra selected for the puncture is definite in its position. It is readily reached from the surface of the perinæum. No important parts intervene. The subsequent escape of urine is direct. The position of the catheter causes little inconvenience. The perinæal incision necessary for reaching the urethra is in nearly all cases required by accumulations of pus and extravasated urine. In such cases nothing is wanting to relieve the bladder but to deepen this incision into the urethra itself: a proceeding surely both milder and more obvious than if, after cutting deeply into the perinæum for pus and extravasated urine, one were to start *de novo* with a trocar, to tap the bladder by the rectum or above the pubes.

I now proceed to bring to your recollection (for most of you have witnessed the cases) the history of several instances presented in our hospital practice, where I have been induced to perform the modified perinæal operation which I have described and recommended to you, and where the results have been remarkably good.

Case 1.—J. W., a lighterman, aged 55, of damaged general health, was admitted into Abraham's Ward, January 22nd, 1850. He had suffered from stricture for sixteen years; and during the last three years, had had a fistulous opening in the scrotum. Urine was discharged in the smallest stream, and only with extreme effort. His urethra was a string of strictures from end to end. Attempts were made twice a week to effect their gradual dilatation by bougies; but much suffering was caused, and little progress made. He had frequent rigors; his nights were restless; and he had little or no appetite. February 14.—The painfulness and sensibility of his urethra made it impossible to persevere in the use of instruments; and, though he was still passing urine, his quick, powerless pulse, anxious countenance, and dry, brownish tongue, showed that he was under great constitutional distress. The following day, at noon, when I saw him, he was worse; the pulse at his wrist was but just perceptible; his voice was barely audible; he was verging on the typhoid condition, and apparently had but few hours to live. Any severe operation was obviously inadmissible; I would not even let him be carried to the operating theatre, but had him placed on the table of the ward, secured in the lithotomy position. With a single puncture I guided my bistoury into the membranous portion of his urethra, immediately in front of the prostate; and then, as the urine flowed, carried a large elastic catheter along the wound into his bladder. He was immediately placed in bed, and stimulants were given him liberally and frequently. His relief was immediate; and, though for many days he continued in a most precarious condition (his life being additionally endangered by an attack of bronchitis) yet we succeeded in keeping him up, and, eventually, in restoring him to health. After a fortnight, the elastic catheter was withdrawn, and gradual dilatation of his strictures begun. He remained for a long while in the hospital, rather for his general health than on account of the local disease; and when he left, could retain his water as long as desirable, and discharge it in a full stream. Several months afterwards he came under my care again, on account of severe ophthalmia; I was then enabled to learn that he was quite free from inconvenience in his urinary organs.

Case 2.—M. N—, a fellmonger, aged 20, of impaired general health, and debauched, drunken habits, had been in the hospital nearly a month, when perinæal abscess and commencing extravasation of urine made an operation necessary. He had been admitted June 11th, 1850, having chancre and bubo, both in a sloughy state, and a stricture of the urethra at its membranous portion, which allowed urine to be passed only with great difficulty. Under proper treatment, his health had improved considerably; the sores had advanced in healing, and the stricture was being gradually dilated, when (July 4—8) severe inflammation was set up in the perinæum, accompanied by rigors and fever. On the 8th it was evident that suppuration had taken place, and the scrotum was beginning to swell. There was more constitutional distress. Having fixed the patient in a proper position, I made a free opening of the perinæal abscess, and deepened the incision behind, so as to open the urethra just in front of the prostate gland. Through this wound an elastic catheter was conducted to the bladder, and was let lie there for a week, during which no urine passed through the natural channel. At this time, all inflammation having subsided, the process of dilating his stricture was resumed. Three weeks afterwards (August 5th) he left the hospital, at his own desire, in good health, able to make water in a full stream, but with the closure of his wound not quite completed.

Case 3.—J. F—, aged 39, having retention of urine with tumefaction of the perinæum and scrotum, was sent to me from Norwood, January 17th, 1851, and was immediately admitted into Abraham's ward. He had suffered from difficult urination during little more than a year; but the evil had progressively increased, so that for the last six weeks his difficulty had been extreme, accompanied by violent straining and occasionally by the passage of blood. The bladder had been very irritable. During the last ten days he had had repeated rigors, and within the same period painful hardness and swelling had taken place at the seat of stricture. Complete retention had arisen on the yesterday, and fruitless endeavours had been made to introduce a catheter. On his admission I found that he had a good deal of chronic infiltration about the

scrotum; that there was a hard lump, exquisitely tender, reaching from the perinæum to the root of the penis; that he had a very close contraction of the urethra, commencing at its bulb; that his bladder was distended; and that he could only dribble out a few drops of urine. He was in great suffering, and it was requisite to relieve him immediately. The membranous portion of his urethra being opened with a straight bistoury, and a large elastic catheter introduced through the wound, about two quarts of urine were drawn off. A quantity of fetid pus escaped at this opening, as also at a second incision, which I thought it prudent to make in the scrotum. The cellular membrane appeared sloughy. His immediate relief was complete, and he recovered with no bad symptom. On the 18th, I ordered him a pint of porter; on the 19th a dose of castor oil; on the 20th four ounces of gin daily, in addition to his beer. On the 27th.—General health improving daily; tongue clean, appetite recovered, bowels regular; scrotum reduced to its natural size; the incision in it healed; little induration remaining in perinæum. Stricture examined—admits a middle-sized catheter, which, however, it was thought well not to press on to the bladder. 28th.—No inconvenience from yesterday's examination of the stricture. On the 31st, elastic catheter discontinued. Feb. 3rd, middle-sized silver catheter carried without pain through the stricture into the badder. 12th, catheter is being passed every other day; he makes water in a good stream; wound in perinæum disinclined to heal. March 12th, stricture quite well, urination quite natural, health quite sound, but wound fistulous—touched with actual cautery. April 12th, a few drops of urine still occasionally escape at the perinæum; hot wire again. April 21st, cured.

Case 4.—J. D—, aged 57, seaman, admitted July 7th, 1851, into Abraham's Ward; has had difficulty in discharging urine for twenty years; has never had entire retention, though often he has only been able to pass it in drops; during the last seven months his sufferings have much increased, and the scrotum and perinæum have been habitually tender and painful. A week before admission, he experienced a sense of something bursting at his fundament, and immediately after-

wards discharged a large quantity of pus *per anum*. On admission, scrotum large, red, tense, exquisitely tender; perinæum hard, painful, very tender; areolar tissue over pubes and lower part of abdomen getting infiltrated; little or no urine traverses the urethra, most of it escaping through the rectum with a large quantity of stinking, purulent matter. On careful examination, it appeared that this passage occurred in an indirect manner; namely, through a large abscess, which, lying between the bladder and rectum, and communicating with both, enabled the former viscus partially to discharge itself through the latter. The man's constitutional condition was all but typhoid. After some reflection, I determined that the urethral operation was his best chance of relief. Having fixed him suitably, I made a free incision in the raphe of the perinæum, venting a pint of fetid pus; sank my bistoury to the urethra, which I punctured at the usual spot; introduced there an elastic catheter, through which a wash-hand basinful of urine discharged itself at once—showing how insufficient had been the previous relief *per anum;* made two incisions at the scrotum and one at the pubes, into sloughy cellular tissue, full of stinking matter; and, having speedily sent the patient back to bed, gave him a glass of hot brandy and water, and warm dressing over all the inflamed integuments. 8th, a.m.—Has slept three or four hours during the night; has drunk eight ounces of brandy with water and some strong beef tea in the last eighteen hours; expresses himself as immensely relieved; discharge of urine through catheter abundant; general condition much improved. 10th.—Having shivered yesterday, and had pain in the scrotum during the night, another incision is made, which allows the escape of some confined fetid pus. 11th.—Much better; some sloughs of cellular tissue have been drawn from the several wounds; copious suppuration; no urine passes by the bowel. 17th.—Has continued to improve daily; appetite for solid food regained; elastic catheter withdrawn from perinæum; small silver catheter passed through stricture. 24th.—Has had painful diarrhœa for some days, requiring the use of krameria with opium; strictures dilating comfortably under use of catheter every three days. 31st.—Diarrhœa gone; general health much improved; takes food well; catheter left in the

urethra for some hours on the days when it is employed. August 16th.—No. 8 catheter can readily be passed into the bladder. 23rd.—No. 12 passed into bladder; wounds in scrotum and pubes quite healed; general health quite re-established. Sept. 8th.—The opening in the perinæum having not yet completely closed, and still giving passage to urine, I ordered him to refrain from making water himself, and to have a catheter passed for him thrice a day, so that the fistula might be undisturbed by urine. This plan appeared to succeed, for, on Sept. 18th, he left the hospital perfectly cured.

Case 5.—J. L., aged 34, a hawker, admitted into Lazarus Ward Oct. 14th, 1851, suffering with perinæal abscess. He has had stricture for at least six years, and has frequently had recourse to surgical aid for the relief of retention of urine. The symptoms of suppuration in the perinæum have been going on for about a week. Immediately on his admission I made a free incision into the abscess, discharging all its contents. Finding that, with very careful manipulation, I could get into the bladder a No. 1 catheter (through which a great deal of urine with muco-purulent matter was drawn off) I flattered myself that any further operation might be dispensed with. Next day, however, I found that he was suffering a great deal of local and general discomfort, and that considerable induration, with pain and tenderness, was extending itself from behind the scrotum to the root of the penis. This convinced me that the measures I had adopted were insufficient to prevent extravasation of urine; I accordingly opened the urethra (as in the foregoing cases) in front of the prostate, and set a large elastic catheter in the wound. This proceeding was followed by marked relief, and the tumour of the scrotum quickly declined. The perinæal catheter was discontinued on the 27th, and dilatation of the stricture begun with a No. 5. The man was of drunken and irregular habits, and required gin during his after-treatment, which otherwise presented nothing remarkable. He became impatient of hospital rules, and left us convalescent, on the 17th November.

Case 6.—J. G., aged 35, sturdy and well-conditioned, but habitually intemperate, was admitted into Abraham's Ward Oct. 17th, 1851, having perinæal abscess, with extensive extravasation of urine. He probably has had stricture for nearly nine years; his first complete retention of urine arose, after a debauch, three years ago, since when it has frequently recurred. The urethra appears to have given way four days ago. With great effort and pain he can dribble out a very little urine through the yard. Pulse 116, small and weak; tongue white and coated; general febrile disturbance; scrotum and perinæum prominent and tense; integument of belly œdematous almost to the navel. I proceeded to treat him in the same manner as the preceding cases,—punctured his urethra from the perinæum, and introduced a catheter through the wound; made a free incision at the scrotum and pubes, discharging an immense collection of pus and urine; and left his stricture unmeddled with for the next ten days. During this time his inflamed parts were poulticed with warm-water dressing, and his strength was sustained by appropriate diet. On the 27th, I withdrew the perinæal catheter, and made my first examination of his urethra. I found that, through a long succession of strictures, beginning just within the orifice, I could conduct a No. 5 into his bladder. From this time gradual dilatation was practised; and he left the hospital cured, Dec. 2nd.

The preceding six cases constitute my total of hospital-operations for retention of urine during the last two years. Most of you may have seen them all. The cases have differed from one another considerably in detail: but in all of them the simple proceeding which I recommend has been effectual. As I review them, I feel assured that for none of them could any other operation have been more successful than that which was performed; and I believe that, for most of them, no other could have been equally successful.

In the first case, the patient was moribund. I do not know that I have ever seen a man with chronic urinary disease recover from such apparent proximity to death. If I had set about dividing his strictures in the perinæum, and forcing a large catheter along the contracted channel of his penis, the loss of blood and the protracted pain would have been too

much for him. He would probably have died on the table. It is true that his urgent symptoms would have been relieved if I had tapped the bladder above the pubes, or by the rectum; and his case, in my judgment, is that one of the series in which it most nearly became a matter of indifference which of these operations should be performed. I have already told you the general principles on which I consider the perinæal puncture preferable to either of the other operations; and in this case, as generally, I saw no reason to choose the greater risk of the supra-pubic puncture, or to effect, by stabbing through the bowel, what could equally be done by traversing the skin. Most effectual relief was given him at a minimum expense of injury; and this, it need not be urged, is the desideratum in every surgical operation.

In all the other cases, urine was actually tending towards the perinæum. An opening of the urethra, though an insufficient one, had been established by an ulcerative process behind the seat of stricture. A perinæal incision was indispensable for the evacuation of pus and extravasated urine. Under these circumstances, to make a second wound through the rectum would have been the infliction of unnecessary mischief.

Indeed, in such cases, one hesitates whether it might not be expedient to advance a step further in the process of simplification; and, since nature has bored a hole in the urethra, whether we might not remain satisfied with a free division of the superficial parts, trusting to the sufficiency of the ulcerated hole (unassisted by a catheter) for maintaining the bladder without distension, and the stricture without irritation.

My one experiment in this direction was not satisfactory. In this instance (Case 5) as the urethra was pervious to a small catheter, and as no considerable diffusion of urine was in progress, I contented myself with a free perinæal incision, reaching to the urethra; and I trusted to the urine finding its way readily by this channel. But on the morrow it was clear that this measure had been insufficient; urine was apparently making its way, according to the general course of its extravasation, towards the pubes; and I therefore, with marked advantage to the patient, passed my bistoury a second time into the wound, opened the urethra there, introduced an

elastic catheter, and thus diverted the entire stream of urine away from the parts where it was hurtful. Rationally, too, one would expect this to be, for all such cases, the safer and better course. One cannot be sure of the exact spot where the pipe has given way; the ulcerated opening may be on one side or the other; it may even be in the upper wall of the urethra; so that its communication with the perinæal vent would be oblique or circuitous; it may be so restricted or valvulated by fascia, as to give the urine facilities for creeping preferably in other directions. It is, I think, an indication of supreme importance, to make the artificial channel of escape as direct and as free as possible.

The fourth case was peculiar in respect of the aperture already made into the rectum, through which urine was flowing; and when the circumstances were under consideration, a very obvious thought arose—whether that communication, already existing between the bladder and rectum, could be turned to account for the patient's cure. I determined in the negative. In its actual state it was evidently insufficient; for extravasation of urine was advancing to a frightful extent. It would have required surgical assistance (by trocar or otherwise) to make it available; and any such proceeding would have been made difficult and hazardous by the abscess between the two viscera, and by whatever change in their mutual relations that abscess had occasioned. If the rectal opening of the abscess were to remain plugged by a canula, who knew but we might have trouble from distension of the suppurating cavity, leading perhaps to some distant and less convenient discharge of its contents, or attended by increase of irritation in those inflamed tissues which the canula must traverse? Looking to the patient's almost typhoid condition, I dared not turn a hair's-breadth from the course which would give him, I knew, instantaneous and complete relief; so, while evacuating by an incision the fetid accumulation of pus and urine with which his perinæum was distended, I likewise punctured his urethra in the manner I have described to you, and conducted a catheter through the wound. Nothing could be more pleasing than his after-progress; he was immediately at ease. One could see how immense a weight had ceased to press down the

springs of his life; and in a very few hours he was removed from imminent peril of death to a state of comparative security.

Thus much for the cases; and, as regards the mechanical details of the operation, I need scarcely add to what I have already said, beyond recommending you to practise on the dead body, at every convenient opportunity, the art of reaching the urethra at its membranous portion without the guidance of a staff. On your power of doing this depends your right to attempt the operation I have described to you. But what can be easier? The canal which you wish to penetrate is not a small one; often, indeed, it is considerably dilated in consequence of the diseased condition which obliges you to operate; its position is invariable, and in every point of its course can be readily explored from the surface. The bulb is subcutaneous. The prostate you feel within the anus. The length of canal between these two points is not an inch; its course straight in the median plane. Any difficulty which might be occasioned by the bulging of the perinæum with pus or extravasated urine ceases, of course, with your first incision, which (in such cases made with proper freedom) gives immediate vent to the confined fluid, and enables you to proceed with facility. Often in thin subjects, and where the urethra has not given way, the distension of this canal, as the patient strains to make water, will render it so evident, that your operation may resolve itself into a mere puncture with a lancet. In the less easy cases, where your subject is fat, or the perinæum deep and infiltrated, there is really nothing to deserve the name of difficulty. You make a sufficient cut in the raphe, terminating a little in front of the anus, and sinking as deep as may be requisite into the cellular tissue. You may then, in the following way, arrive at the point of the urethra which you wish to penetrate. Pass your right forefinger into the anus; ascertain, through the wall of the bowel, the position of the prostate; bring your finger forward till it discovers the anterior extremity or apex of the gland; let it just pass this spot, and rest (nail upwards) pressing with its point immediately in front of the gland. Of course, if the parts were transparent, you would now see your finger indenting the membranous portion of the urethra at that hindermost point of its course where you purpose to puncture it. Now

pass your left forefinger (nail upwards) into the wound; advance it till (with the guidance of the finger in the rectum) it falls against the apex of the prostate; there you so arrange it, that the middle phalanx presses back the rectum; the last phalanx lies along the prostate, with the tip of its nail indicating the spot at which the urethra emerges. Finally, withdrawing your right fore-finger from the anus, and resuming the bistoury, you run this along the left fore-finger, till you penetrate the canal on which it rests, and immediately follow it by the short elastic catheter which you intend leaving in the bladder.

The cut is made into the urethra, you observe, just at the confines of its prostatic and membranous portions; a spot which is posterior to the seat of stricture, and is easy to hit, from the definiteness and invariability of its position.

With a little practice on the dead subject, you will readily acquire the knack of doing this operation in the natural condition of the parts with a single puncture; and you will find that disease alters those natural relations far less than is commonly stated. But in the most difficult cases which can come before you, if you follow the rule I have given you, and carefully determine through the rectum the exact point at which the urethra emerges, you will fail to find any embarrassment, and will complete the operation in much less time than I have taken to describe it.

The after-treatment of these cases, for some days succeeding the operation, is not unimportant. Liberal allowance of stimulants is often required, sometimes from the very first. This purpose I generally effect by wine, or (if the stomach be irritable) by brandy with soda water. Actual drugs I rarely use, unless it be to procure action from the bowels, which, if their secretions be much disordered, I do as early as possible, with either colocynth or compound rhubarb pill, in combination with blue pill. Opium I do not find admissible.

As regards the history of the operation which I have recommended to you, I cannot give you very full details. If you refer to Sir Astley Cooper's Lectures on Surgery,* you will find that, at the time of their delivery, he recommended, in

* Vol. ii, pp. 315—317.

cases of simple stricture, that a puncture should be made into the urethra where distended by urine, immediately behind the seat of stricture; and Sir Benjamin Brodie (who rather leans to the rectal operation) speaks* of the puncture of the urethra as "a sufficiently simple and unobjectionable proceeding." As far as I can judge from Sir Astley Cooper's scanty description, it was only in cases of stricture far forward in the urethra that he adopted this course, and "passed a lancet" into some part of the canal anterior to the bulb. At least, if he ever practised any such operation as I advise for strictures situated further back in the urethra, so that his puncture would have been made in the vicinity of the prostate, I suspect that he soon afterwards abandoned it for the supposed advantages of dividing the stricture. The latter operation seems to have taken its rise about forty years ago. It was first practised, I believe, by the late Mr. Grainger of Birmingham —father of my distinguished colleague, our teacher of Physiology, and is very well described in a volume of 'Medical and Surgical Remarks,' published by that gentleman in 1815. It soon became the general operation for cases of stricture, and has been extensively practised, in the Borough hospitals and elsewhere, down to the present time. When Mr. Grainger found himself unable to accomplish it, he used to make a partial division of the prostate, as in the lateral operation of lithotomy, and thus convey an elastic catheter to the bladder. Sir Benjamin Brodie recommends, in cases where the urethra has given way behind a stricture, and where a bougie can be introduced, that this should be used as a director for the introduction of a perinæal catheter, and that the latter should be left in the wound for one or two days.

I am not aware of any surgeon having habitually practised the operation in the form I have described; and, from such observations as I have made on the subject, it seems to me well worthy of more general adoption. Practised in the manner I advise, it may, I think, entirely supersede the operations for tapping the bladder, except in those very rare cases of prostatic tumour, where the supra-pubic puncture is inevitable. It likewise entirely annuls the supposed necessity, while it avoids the difficulties and dangers, of dividing the

* 'Diseases of Urinary Organs,' p. 42.

stricture *in perinæo* for the relief of retention of urine. And its advantages, meanwhile, are purchased by so trifling an endurance of pain, inconvenience, or injury, that I could not cite to you, from the whole practice of surgery, any parallel instance of disproportion between means and results—any instance where, from an extremity of disease, suffering, and danger, the patient is suddenly removed, by surgical appliances so simple and so secure, to a condition of comparative enjoyment and safety.

The only argument likely to be urged against the proceeding in question is one which I may best anticipate and answer in Sir Astley Cooper's words. "This operation has been objected to (he says) on the supposition that it requires great anatomical knowledge. To this objection I will say, that he who is adverse to an operation because it requires anatomical knowledge, should immediately give up his profession; for if surgery be not founded upon an accurate knowledge of anatomy, it will be better for mankind that there should be no surgery, as disease will proceed better with the natural means of relief than with the aid of those surgeons who are not anatomists."